

### Annual Report for 1971

The Eye Clinic is fully supported by the Danish National Board of Social Welfare. Service is rendered primarily to mentally retarded patients in the Copenhagen area, but retarded individuals with severe visual medico-educational problems that require special ophthalmological observation are admitted from other parts of the country.

The staff consists of a part-time ophthalmologist and two half-time secretaries.

The ophthalmologist was attached as a Visiting Professor to the Department of Medical Genetics, Indiana University, Indianapolis, U.S.A., for three months during 1971, so that the number of consultations given in 1971 were only 377. A total of 301 patients were examined; 69 were on the waitinglist at the end of 1971, while 178 had been listed for check-up examination in 1972.

Of the 2822 mentally retarded individuals in Copenhagen, 972 have been seen at the Eye Clinic since it was opened. It is noteworthy that 167 of these are blind or partially sighted, as seen from the tables at the end of this report.

A survey of the number of persons ascertained to have severe visual handicaps in the Copenhagen and extra-metropolitan areas is given in Table 1, which reveals roughly the same relative prevalence of blind and partially sighted children in the two areas. The frequency of partially sighted adults in the Copenhagen area is much higher than in the extra-metropolitan group. This suggests that the ascertainment of adults with low vision is poor in that part of the population of mentally retarded individuals living outside Copenhagen who have not been subjected to systematic ophthalmological examination.

It is a striking observation that 29 adults in the Copenhagen area were found to suffer from severe visual handicaps in the form of excessive myopia in spite of corrective glasses, while this was the case in only three adults in the extra-metropolitan area, which comprises a population of mentally retardeds that is 7-8 times as large. In the group from Copenhagen, severely reduced vision was due to optic atrophy in 12 and to cataract in 13. Only 15 and 13 with these

Table 1.

Number of visually handicapped individuals among 972 consecutively examined persons with mental retardation in Copenhagen, and the number of blind and partially sighted, mentally retarded persons reported to the central registration office.

Copenhagen			Extra-metropolitan area		
	Blind	Partially sighted	Total	Blind	Partially sighted
					Total
Children	60	39	99	68	31
Adults	13	55	68	62	17
Total	73	94	167	130	48
Total number of mentally retarded	2822		Total number of mentally retarded		19 324
Total number examined	972				

diagnoses were reported from the rest of the country. The survey is thus still far from complete. However, it shows that reduced visual acuity is a major problem in mentally retarded individuals.

In the beginning of February 1971, 28 children who were both visually and mildly mentally retarded were supervised by itinerant teachers from the National Institute for the Blind in collaboration with the teachers in charge of the children. The inadequacy of this arrangement is appalling. It is hoped that the Government will find ways and means to provide special education to the many visually handicapped and retarded individuals who are the responsibility of the National Board of Social Welfare.

#### Research in Progress

- Continuation of the central registration of blind and partially sighted persons in Danish institutions for the mentally retarded. The work is supported by a grant from the Research Foundation for the National Service of the Mentally Retarded.
- Continuation of investigations on sex-linked retinitis pigmentosa and choroideraemia, supported by a grant from the Danish Committee for the Prevention of Blindness.
- Biochemical investigations in patients with ectopia of the lens in co-operation with C. Munk Plum, Ph.D.

The cumulative reviews on mental retardation syndromes, published in *Ugeskrift for Læger*, will be continued. The editorial team consists of B. Beck, M.D., Margareta Mikkelsen, M.D., E. Niebuhr, M.D., B. Russel, D.S. and the staff of the Eye Clinic. At the end of 1971, nine reviews had been published.

#### **Publications**

Annual report for 1970

The heterogeneity of microphthalmia in the mentally retarded. Birth Defects. Original Article Series. vol. VII, No. 3, p. 136. The Williams & Wilkins Co., Baltimore 1971.

Norrie's disease. Birth Defects. Original Article Series. Vol. VII, No. 3, p. 117. The Williams & Wilkins Co., Baltimore March 1971.

Sex-linked retinitis pigmentosa and the Lyon hypothesis. Trans. Ophthal. Soc. U.K. In press.

Co-editor of a series of selected syndromes in patients with mental retardation. (In Danish). Ugeskrift f. Læger.

In collaboration with Margareta Mikkelsen and E. Niebuhr: Down's syndrome. Ugeskrift f. Læger. 113: 596:1971.

Focal Dermal Hypoplasia. (In Danish). Ugeskrift f. Læger. 133: 1462:1971.

Norrie's Disease. (In Danish). Ugeskrift f. Læger 133: 2543:1971.

Diagnosis of Metabolic Eye Diseases. Pp. 112. Munksgaard. Copenhagen.

#### **Lectures**

Congenital sex-linked cataract and dental anomalies. Amer. Soc. Ophth. & Vision 1971.

Recessive, intermediate and dominant sex-linked retinitis pigmentosa. Alumni Reunion Meeting. Dept. of Ophthalmology, Univ. of Pennsylvania 1971.

Inactivation of the X chromosome in intermediate X-linked retinitis pigmentosa. Oxford Ophthalmological Congress 1971.

Ophthalmic diagnosis of metabolic diseases. "Saturday Conference", Lund 1971.

METTE WARBURG, M.D.  
Consultant Ophthalmologist

BIRTE LINELL  
Secretary

KIRSTEN RATHSACH  
Secretary

**WHO International Classification of Diseases**  
**Copenhagen Area**

Abbreviations: B, boys; M, men G, girls; W, women	Age					
	0-14		15-69		70+	
	B	G	M	W	M	W
04. <i>Viroses</i>						
04. 122. 1. Toxoplasmosis	1					
16. <i>Neoplasma benigna</i>						
16. 223. Neoplasma benign. oculi					1	
30. <i>Morbi inflammatorii oculi</i>						
30. 370. 10. Conjunctivitis acuta	1				1	
30. 371. Blepharitis	1					
30. 375. 40. Chorioiritidis seq.	1				1	
31. <i>Anomalia refractionis</i>						
31. 380. 0. Anisometropia	1				1	
31. 380. 10. Astigmatismus	3	3	2	3		
31. 380. 30. Hypermetropia	10	7	7	9	1	1
31. 380. 40. Hypermetropia excessiva ( $\geq +5$ )	4	2	3	2		
31. 380. 50. Myopia simplex	4	1	4	6		
31. 380. 60. Myopia excessiva ( $\leq -5$ )	3	3	5	11	1	
31. 380. 70. Presbyopia			1	2	1	
31. 383. Pterygium			1			
31. 384. <i>Strabismus</i>						
31. 384. 30. Esophoria				1		
31. 384. 31. Esotropia monolateralis	9	6	2			
31. 384. 32. Esotropia alternans	9	6	1	5		
31. 384. 40. Exophoria	2		2		1	
31. 384. 41. Exotropia monolateralis	1		1	4		
31. 384. 42. Exotropia alternans	2	2	1	3		
31. 384. 70. Insufficientia convergens					1	
31. 385. <i>Cataracta</i>						
31. 385. 10. Cataracta senilis				1		
31. 385. 20. Cataracta complicata				1		
31. 386. Ablatio retinae + ruptura retinac				1		
31. 387. 40. Glaucoma simplex				1		

(Cont.)

**WHO International Classification of Diseases**  
Copenhagen Area

	Age					
	0-14		15-69		70-	
	B	G	M	W	M	W
31. 388. <i>Alii morbi oculi</i>						
31. 388. 08. Ptosis palpebrae non congenita			2			
31. 388. 32. Keratoconus			2			
31. 388. 72. Atrophia n. optici	12	8	4	2		
31. 388. 73. Deg. mac. scn.				1		
31. 388. 76. Fibroplasia retrorentalis	1	1	1			
31. 388. 82. Amblyopia ex anopsia non strabotica			1	1		
31. 389. Amaurosis	1					
44. 453. 03. Tortuositas vasorum	1					
86. <i>Malformationes congenitae</i>						
86. 753. 00. Cataracta congenita	4	3	2	3		
86. 753. 14. Blepharophimosis		1		1		
86. 753. 19. Ptosis palpebrae	2					
86. 753. 43. Coloboma irides, chorioideae	2					
86. 753. 44. Atrophia chorioideae		1				
86. 753. 62. Alia malformationes n. optici non specificata		1				
86. 753. 65. Degeneratio macularis	1		1	1		
86. 753. 66. Degeneratio tapetoretinalis	2	1	1			1
86. 753. 76. Microphthalmus	2			1		
86. 758. 20. Hypertelorismus		1	1			
87. <i>Laesiones in partu, asphyxia, infectiones neonatorum</i>						
86. 769. 80. Toxoplasmosis congenita, immaturitate indicata	1					
88. <i>Symptomata, senilitas, casus male definiti</i>						
88. 781. 10. Agnosi optica	1	1				
88. 781. 15. Nystagmus	1	2		2		
88. 781. 30. Hemianopsia homonyma	1					

(Cont.)

**WHO International Classification of Diseases**  
**Copenhagen Area**

	Age					
	0-14		15-69		70-	
	B	G	M	W	M	W
88. 781. 151. Nystagmus latens		2	1	2		
88. 781. 153. Nystagmus rotatorius	3					
88. 793. 03. Observatio			1			
96. N 921. Contusio oculi orbitae			1			
 <i>Y. Casus speciales, examinationes sine morbo</i>						
Y. 09. Persona sine symptomati morbi	17	10	8	4		
Total	102	64	61	67	5	2

**Classifications of Causes of Blindness**  
**Copenhagen Area**

I. By Aetiology			Age					
			0-14		15-69		70+	
			B	G	M	W	M	W
<i>Infectious diseases</i>								
14.0	Meningitis	1967	1					
		1971	1					
23.0	Rubella	1967		1				
		1969	1					
25.1	Toxoplasmosis prenatal	1967	2					
		1968	1					
		1969	1					
		1970	2					
		1971	1					
<i>Accidents, poisoning, violence</i>								
46.0	Surgical or medical procedure	1967	1					
46.15	Dysoxygenation	1967	1			1		
		1970	2					
		1971		1				
48.0	Other external cause specified	1970	1					
		1971	1					
49.0	External cause not specified	1968	1					
<i>General diseases not elsewhere classified</i>								
65.2	Intracranial neoplasm	1971		1				
65.8	Other disorders of central nervous system specified	1967	1	1				
		1968	2					
65.9	Disorder of central nervous system not specified	1967	1					
		1968	1	1	1			
		1969	1					
		1970	1					
<i>Prenatal influence not elsewhere classified</i>								
81.0	Genetic origin established	1968	1					
		1969				1		
82.0	Genetic origin probable	1969	1					
		1970			1			
		1971	2					

(Cont.)

**Classifications of Causes of Blindness**  
**Copenhagen Area**

I. By Aetiology		Age					
		0-14		15-69		70+	
		B	G	M	W	M	W
88.00	Other prenatal influence not elsewhere classified, spec.:						
88.10	Central nervous system	1967	2	2	1		
		1968		1			
		1969	2				
		1970	3				
		1971	1				
88.20	Chromosomal	1967					
88.40	Syndromes	1969				1	
		1970		1		1	
89.0	Prenatal influence not specified	1967	6	1			
		1968	1				
		1970		1	1	1	
91.0	Unknown to science	1967		2	1		
		1968			2	1	1
		1969			1		1
		1970	1				3
		1971		1			
98.0	Evidence insufficient for diagnosis	1968					1
		1970		1			
Total		44	16	7	6	5	1

**Classifications of Causes of Blindness**  
**Copenhagen Area**

II. By Site and Type of Affection		Age					
		0-14		15-69		70-	
		B	G	M	W	M	W
<i>Eyeball in general</i>							
110	Glaucoma excluding infantile	1970				1	
122	Myopia, detachment of retina not specified	1967		1			
		1968		2	1		
		1970				1	
144	Microphthalmia	1969	1		1		
		1970	1				
<i>Cornea</i>							
370	Keratoconus	1967		1			
<i>Lens</i>							
410	Cataract	1967	3	2		1	
		1968					1
		1969	1				
		1970				1	
		1971	1				
<i>Uveal tract</i>							
560	Chorioretinitis	1967	1				
		1968	1				
		1970	1		1		
		1971	1				
<i>Retina</i>							
630	Retrorenal fibroplasia	1967	1			1	
		1970	2				
		1971		1			
650	Tapetoretinal degeneration and allied conditions including retinitis pigmentosa	1967		1			
		1970		1			
660	Macular degeneration	1967	1				
		1969	1				
		1971			1		
<i>Optic nerve, optic pathways, and cortical visual centres</i>							
710	Optic nerve atrophy	1967	6	3			
		1968	4	1			
		1969	3				

(Cont.)

## **Classifications of Causes of Blindness Copenhagen Area**

**Classifications of Low Vision**  
Copenhagen Area

I. By Aetiology		Age					
		0-14		15-69		70+	
		B	G	M	W	M	W
<i>Infectious diseases</i>							
14.0	Meningococcal infection	1971			1		
25.1	Toxoplasmosis prenatal	1967		1	1		
29.0	Infectious disease, not specified	1969			1		
<i>Accidents, poisoning, violence</i>							
45.0	Birth Process	1967	2		1	1	
		1968				1	
<i>General diseases not elsewhere classified</i>							
65.8	Other disorder of central nervous system specified	1967					
		1968		1			
		1969	1				
65.9	Disorder of central nervous system, not specified	1969			1		1
<i>Prenatal influence not elsewhere classified</i>							
81.0	Genetic origin established	1967		1			
		1968				1	
		1969				1	
		1970				1	
82.0	Genetic origin probable	1967	1				
		1971	2	1		1	
88.0	Other prenatal influence not elsewhere classified, specified:						
88.10	Central nervous system	1967	3	4			
		1968	1	1			
		1969	1			1	
		1970	2	1		1	
88.20	Chromosomal	1967	1			1	
		1969				2	
88.40	Syndromes	1967			1		
89.0	Prenatal influence not specified	1967	2	1			
		1968	1		1	1	
		1969	1	3	2		
		1970			1	1	
		1971			1		

(Cont.)

**Classifications of Low Vision**  
**Copenhagen Area**

I. By Aetiology			Age					
			0-14		15-69		70+	
	B	G	M	W	M	W		
91.0      Unknown to science	1967			2	2		1	1
	1968	2				5		
	1969			2	7			
	1970	3		1	2		1	1
	1971	1	1	2	4			
98.0      Evidence insufficient for diagnosis	1968					1		1
	1969				1			
	1971	1						
	Total	25	14	18	37		2	3

**Classifications of Causes of Low Vision**  
**Copenhagen Area**

II. By Site and Type of Affection		Age					
		0-14		15-69		70+	
		B	G	M	W	M	W
<i>Eyeball in general</i>							
121	Myopia with detachment of retina		1969		1		
122	Myopia, detachment of retina not specified		1967	1	2	4	
			1968	2	1	3	
			1969	1	1	4	
			1970	2	1	2	1
			1971		1	2	1
144	Microphthalmia		1967			1	
			1968			1	
			1970			1	
145	Aniridia		1967		1		
146	Coloboma, any part, excluding surgical		1967		1		
			1969	1			
			1970		1		
180	Other general affection of eyeball specified		1969		1		
<i>Cornea</i>							
319	Keratitis, other type specified		1968				1
370	Keratoconus		1968			1	
			1970	1			
			1971		1		
<i>Lens</i>							
410	Cataract		1967				1
			1971		1		
410.10	Congenital cataract		1967				1
			1968			1	
			1969			3	
			1970			2	
<i>Uveal tract</i>							
560	Chorioretinitis		1969			1	
<i>Retina</i>							
650	Tapetoretinal degeneration and allied conditions including retinitis pigmentosa		1967	1	1		

(Cont.)

## **Classifications of Causes of Low Vision Copenhagen Area**

II. By Site and Type of Affection (cont.)		Age					
		0-14		15-69		70+	
		B	G	M	W	M	W
660	Macular degeneration	1969				1	
		1971	2		1		
		1967	1				
		1970	1				
		1971	1			1	
<i>Optic nerve, optic pathway, and cortical visual centres</i>							
710	Optic nerve atrophy, optic neuritis or papilloedema	1967	5	1	1	1	
		1968	2	1		2	
		1969	1	2	1	3	
		1970	1	1			
		1971		1	1	1	
740	Affection of optic nerve not specified	1967	1				
750	Lesion of optic pathway or cortical visual centre	1967		1			
<i>Site and type indefinite or not reported</i>							
945	Amblyopia uni- or bilateral not explained	1969			2		
		1967	1	1	1		
950	Congenital nystagmus	1968	1			1	
		1970			1		
		1971	1			1	
		Total	25	14	18	37	2
							3

**WHO International Classification of Diseases**  
**Extra-Metropolitan Area**

Abbreviations: B, boys; M, men G, girls; W, women	Age					
	0-14		15-69		70+	
	B	G	M	W	M	W
30. <i>Morbi inflammatorii oculi</i>						
30. 375. 0 Chorioiditis foetalis	1					
30. 375. 40. Chorioditidis seq.				1		
31. <i>Anomalia refractionis</i>						
31. 380. 60. Myopia sexcessiva ( $\leq 5$ )			2	2		
31. 382. Opacitas cornea				1		
31. 385. <i>Cataracta</i>						
31. 385. 20. Cataracta complicata				1		
31. 388. <i>Alii morbi oculi</i>						
31. 388. 33. Megalocornea non cong.	20	13	7	7		
31. 388. 72. Atrophia nervi optici	3	4	3	7		
31. 388. 76. Fibroplasia retrorentalis	4					
31. 389. Amaurosis						
86. <i>Malformationes congenitae</i>						
86. 753. 00. Cataracta congenita	11	7	7	4		
86. 753. 14. Blepharophimosis		1				
86. 753. 19. Ptosis palpebrae				1		
86. 753. 43. Coloboma irides, chorioideae		3		2		
86. 753. 44. Malformationes variae irides				1		
86. 753. 51 Ectopia lentis				2		
86. 753. 55. Corpus vitr. prim. persistens	1		3			
86. 753. 56. Degeneratio vitreo- retinalis				1		
86. 753. 61. Anomalii vascularisationis	1					
86. 753. 62. Alia malformationes n. optici non specificata	2	1		1		
86. 753. 63. Coloboma n. optici		1		1		
86. 753. 65. Degeneratio macularis	2					
86. 753. 66. Degeneratio tapetoretinalis	3	6	7	4		
86. 753. 74. Glaucoma cong.				2		
86. 753. 76. Microphthalmus	2		6	3		
87. <i>Laesiones in partu, asphyxia, infectiones neonatorum</i>						
87. 769. 20. Embryopathia rubeculosa	1					

(Cont.)

**WHO International Classification of Diseases**  
**Extra-Metropolitan Area**

	Age					
	0-14		15-69		70-	
	B	G	M	W	M	W
87. 769. 80. Toxoplasmosis congenita immaturitate indicata		1				
88. <i>Symptomata, senilitas, casus male definiti</i>						
88. 781. 10. Agnosia optica	2	3				
88. 781. 15. Nystagmus	1	1	1	1		
88. 781. 30. Hemianopsia homonyma			1			
88. 781. 40. Læsio tractata optica	1					
88. 793. 03. Observatio	2	1				
Total	57	43	45	34		

**Classifications of Causes of Blindness**  
**Extra-Metropolitan Area**

I. By Aetiology		Age					
		0-14		15-69		70+	
		B	G	M	W	M	W
<i>Infectious diseases</i>							
14.0	Meningitis	1971	2		1		
23.10		1971	2	2	1		
25.1	Toxoplasmosis prenatal	1971		1	1	1	
28.0	Other infectious disease spec.	1971	1	1			
29.0	Infectious disease not spec.	1971				1	
<i>Accidents, poisoning, violence</i>							
42.0	Household activity	1971	1				
44.0	Traffic or transportation other than occupational	1971	2				
45.0	Birth process	1971			1		
46.0	Surgical or medical procedure	1971	1				
46.15	Dysoxygenation	1971	3	4	3	7	
<i>General diseases not elsewhere classified</i>							
65.2	Intracranial neoplasm	1971			1	1	
65.8	Other disorders of central nervous system spec.	1971	5	3			
65.9	Disorder of central nervous system not specified	1971	1	1	2		
<i>Prenatal influence not elsewhere classified</i>							
81.0	Genetic origin established	1971	2	3	4	3	
82.0	Genetic origin probable	1971	2	3	9	2	
88.0	Other prenatal influence not elsewhere classified, spec.	1971	1				
88.10	Central nervous system	1971	6	1	1		
88.20	Chromosomal	1971		1		2	
88.40	Syndromes	1971	1	1	6	1	
89.0	Prenatal influence not spec.	1971		2		3	
89.1		1971	3	1	3	1	
91.0	Unknown to science	1971	1	2	3	3	
98.0	Evidence insufficient for diagnosis	1971	6	2	1		
		Total	38	30	36	26	

**Classifications of Causes of Blindness**  
**Extra-Metropolitan Area**

II. By Site and Type of Affection			Age					
			0-14		15-69		70+	
			B	G	M	W	M	W
<i>Eyeball in general</i>								
143	Hydrophthalmos	1971			2			
144	Micropthalmia	1971	2		6	2		
<i>Cornea</i>								
320	Corneal dystrophy	1971			1			
360		1971				1		
<i>Lens</i>								
410	Cataract	1971	3	4	4	5		
420	Dislocated lens	1971			2			
<i>Uveal tract</i>								
560	Chorioretinitis	1971				1		
581	Coloboma chor.	1971		1		1		
<i>Retina</i>								
630	Retrobulbar fibroplasia	1971	3	4	3	7		
650	Tapetoretinal degeneration and allied conditions incl. retinitis pigmentosa	1971	3	5	7	4		
<i>Optic nerve, optic pathways, and corneal visual centres</i>								
710	Optic nerve atrophy	1971	19	13	7	5		
750	Lesion of optic pathway or cortical visual centre	1971	5	3				
<i>Vitreous</i>								
880	Other affection of vitreous specified	1971	1		4			
<i>Site and type indefinite or not reported</i>								
980	Evidence insufficient for diagnosis	1971	2					
	Total		38	30	36	26		

**Classifications of Causes of Low Vision**  
**Extra-Metropolitan Area**

I. By Aetiology		Age					
		0-14		15-69		70+	
		B	G	M	W	M	W
<i>Infectious diseases</i>							
23.10		1971	4	1			
25.1	Toxoplasmosis prenatal	1971		1			
<i>General diseases not elsewhere classified</i>							
65.8	Other disorder of central nervous system specified	1971		1			
65.9	Disorder of central nervous system, not specified	1971	1			1	
<i>Prenatal influence not elsewhere classified</i>							
81.0	Genetic origin established	1971	3				
82.0	Genetic origin probable	1971	2	1			
88.0	Other prenatal influence not elsewhere classified specified	1971	1				
88.10	Central nervous system	1971	1				
88.20	Chromosomal	1971		1	3		
88.40	Syndromes	1971	1	1	1		
89.0	Prenatal influence not spec.	1971				3	
89.1		1971	2	1		1	
91.0	Unknown to science	1971	3	2	5	3	
98.0	Evidence insufficient for diagnosis	1971	2	2			
Total		Total	20	11	9	8	

**Classification of Causes of Low Vision**

Extra-Metropolitan Area

11. By Site and Type of Affection			Age					
			0-14		15-69		70+	
	B	G	M	W	M	W		
<i>Eyeball in general</i>								
122 Myopia, detachment of retina not specified		1971			2	1		
130 Panophthalmitis		1971			1			
146 Coloboma, any part, excluding surgical		1971				1		
<i>Cornea</i>								
360 Keratomalacia		1971					1	
<i>Lens</i>								
410 Cataract		1971	9	2		4		
410.10 Congenital cataract		1971	1					
<i>Uveal tract</i>								
560 Chorioretinitis		1971		1				
580 Other affection of iris, ciliary body or choroid spec.		1971		1				
581 Coloboma chorioideae		1971		1	1	1		
<i>Retina</i>								
650 Tapetoretinal degeneration and allied conditions including retinitis pigmentosa		1971	2	1				
660 Macular degeneration		1971	1					
681 Coloboma nn. opt.		1971		1				
<i>Optic nerve, optic pathway, and cortical visual centres</i>								
710 Optic nerve atrophy, optic neuritis or papilloedema		1971	5	1		3		
750 Lesion of optic pathway or cortical visual centre		1971	1	1				
<i>Site and type indefinite or not reported</i>								
950 Congenital nystagmus		1971	1	1	1	1		
980 Evidence insufficient for diagnosis		1971		1				
	Total		20	11	9	8		

*J.J. d  
22.1.1972  
REGIMENT*